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UNSUITABLE LAND POLICY

FROM

THE WESTERN RANGE—A GREAT
BUT NEGLECTED NATURAL RESOURCE

FOREST SERVICE

U. S. DEPARTMENT OF AGRICULTURE



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UNSUITABLE LAND POLICY

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INTRODUCTION

The lack of constructive national land policy designed to fit the semiarid and mountain grazing lands of the West has been a major factor in the depletion of our once great range forage resource. The belief in universal private ownership of land, the application to such a region of land laws designed to fit humid conditions, the failure to classify lands according to their highest use, and interpretation and administration of the statutes all played a definite part. The adverse effects of our past land policy on the ownership pattern of range lands and its influence on forage depletion are matters for national concern.

The range country, as defined elsewhere, roughly includes all of the usable range lands west of the line which divides the tall-grass prairies from the short-grass plains. While there is much country east of this line best suited for range use and also much admirable crop land farther west, it is generally true that only in the most favored locations is the low annual precipitation of the semiarid West sufficient without irrigation for permanent, successful crop agriculture.

A brief résumé of the purpose back of the acquisition by the United States of this immense area may provide a background which will aid in understanding the causes for the mistreatment to which it has been subjected. During the period of acquisition, the first half of the nineteenth century, most of that great stretch of country from Omaha west to the Rocky Mountains was mapped as the Great American Desert.

Here was a country, stretching all the way from the Red River to the Canadian boundary, which seemed destined by a kind Providence to provide a permanent home for the Indian. Here he might live undisturbed, freed from the pressure of the westward-moving pioneer, who would never * * * settle in that semiarid, treeless country where all efforts at agriculture must surely fail. * * * Beyond the Missouri could never be utilized by white men, but must ever remain the home of the wild tribes who roamed over those frightful and terrifying wastes. (98.)

Why, then, did we acquire this country?

The Louisiana Purchase of 1803 (fig. 60) was made because President Jefferson was convinced that we must control the port of New Orleans, then in French possession (74). Free access to the Gulf was essential to the development and future prosperity of the Ohio and lower Mississippi Valleys. He sent Monroe to join Livingston, our Ambassador to France, to bargain for the port and Napoleon refused to relinquish the French claim unless he could include the

entire French possessions on the Mississippi River Drainage. Much as they disliked to do so, our envoys acceded to his demands and that immense area was added to the public domain (5).

Texas, a sovereign State which had recently won its freedom from Mexico, was annexed in 1845. Settlement had been partly from Mexico, but mainly through the efforts of an American colonizer, Austin, who had been granted concessions from the Mexican Government (87). Through Austin's influence a large number of frontiersmen from the United States had taken up land and settled in the east portion. In self-protection against Mexico, they petitioned for admission to the Union, and after a political battle they were permitted to join. However, that immense area of predominantly

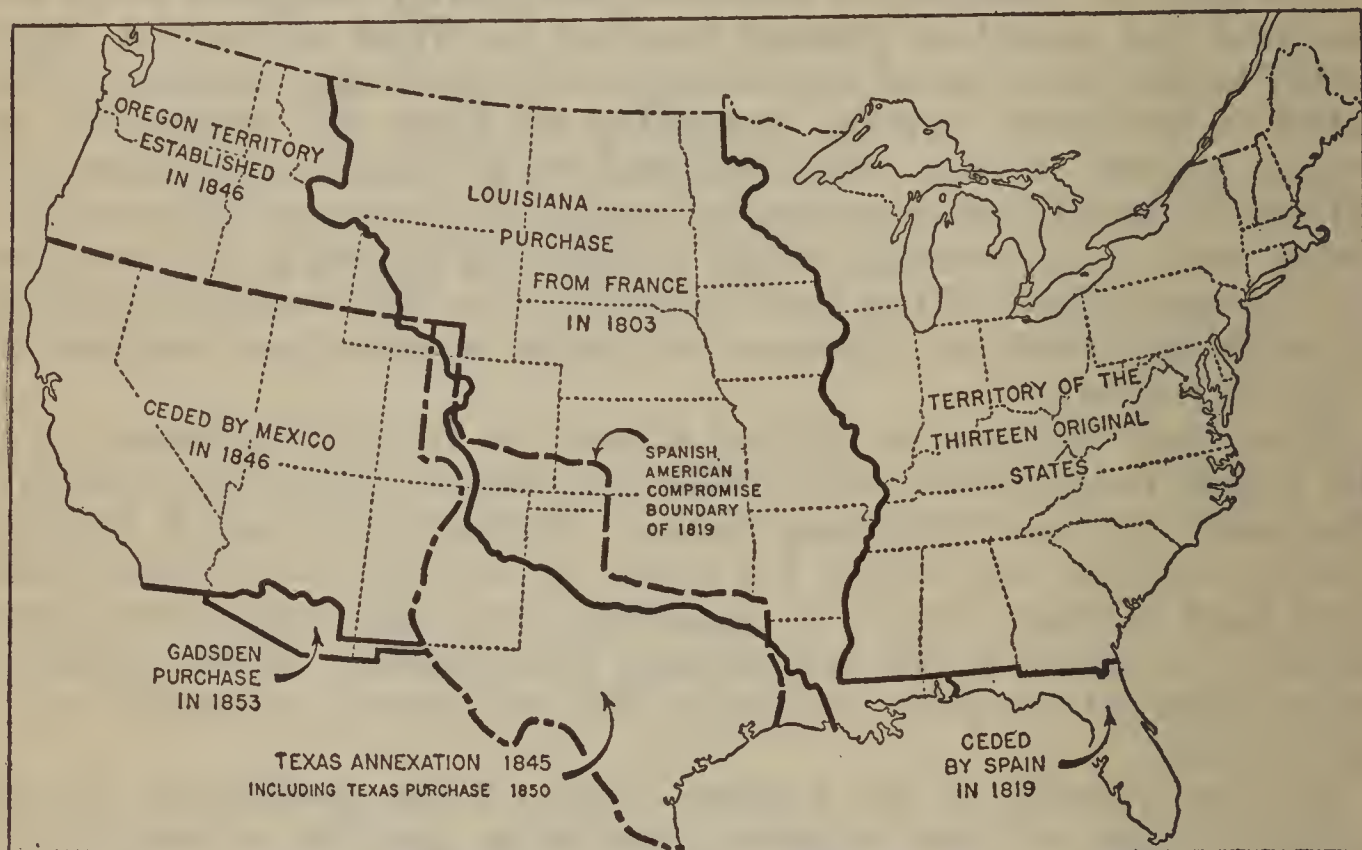


FIGURE 60.—BUILDING OF THE WESTERN RANGE LANDS.

The future range lands of the United States were acquired in huge tracts within a space of 50 years, with little if any thought of the wealth in forage and other products and services that they comprised. Areas in millions of acres, from General Land Office figures are: Louisiana Purchase, 529.9; Texas Annexation (independent of the Texas Purchase of 1850), 170.2; Oregon Territory, 183.4; Texas Purchase, 78.9; Mexican Cession, 338.7; Gadsden Purchase, 19.0.

range lands was considered so worthless that we refused to assume their public debt of \$10,000,000, and in lieu they retained sovereignty over all land within their borders (146). Final settlement of the boundary claims of Texas was effected in 1850, when part of the area claimed by Texas, including part of New Mexico, Oklahoma, Colorado, Wyoming, and Kansas, was acquired by purchase. Thus there has been no Federal public domain within the present boundary of the State of Texas.

The Oregon Territory was acquired in 1846, primarily because of the flourishing fur trade which had been built up largely by John Astor. This pioneer industry was so important that in spite of objections we again included much additional land which was then believed to be worthless. The great region acquired from Mexico in

1848 was wanted, partly because of agricultural or range values, but more because we could foresee the need for the Golden Gate Harbor and the Southern California ports. The Gadsden Purchase of 1853 was made primarily to provide an all-American route for the Southern Pacific Railroad (64). Thus, range forage values seem to have played little part and even not to have been visualized during the period of acquisition.

The general excellence of the forage cover over the greater part of the range country when the white man came in has been fully described. Briefly, the 848 million acres which constituted the virgin range supported close to its climax vegetation. Yet, within a single life span the greater part of this resource was destined to serious depletion. Much of the finest was to be denuded by the plow in an attempt at cropping lands suited only for grass. Truly, we have gone a long way to establish in fact the "Great American Desert" so familiar on the maps of the Oregon and Santa Fe Trail days.

THE PERIOD OF DISPOSAL

The disposal of western range lands antedates the acquisition of the West by our Government. The system followed in Texas and the Southwest is of special significance.

Texas, the Gadsden Purchase, and the Mexican annexation were all originally under Spanish ownership. Thus the Spanish philosophy of land colonization was established over a very large area prior to acquisition. In parts of Texas, New Mexico, and California the beginnings of a landed aristocracy were well established. Army officers, priests, personal friends of the ruling group, and adventurers anxious to settle the new country, were favored by grants of land. The civilization thus started, perhaps a remnant of the old feudal system in Spain, was designed to perpetuate a landed aristocracy and a lower caste to which land ownership was denied. Even yet our southwestern range country exhibits a tendency toward very large outfits to which is attached a peon type of existence.

Exact records of the Spanish and Mexican land grants in most instances have not been preserved. It is known that certain grants date back as far as 1731 (87) in Texas²⁶ and 1773 in California. It is probable that commitments of more or less legal nature were made long before those dates. The period between the passage of the Mexican land law of 1824 and acquisition of the area by the United States, however, accounts for the great majority of land which passed to private ownership by this method.

The various treaties of acquisition recognized the legality of land titles secured by prior grants. However, actual surveys of the land were made in relatively few cases. Claims to title frequently overlapped, or were possessed by more than one individual. Evidence of legal title often was lacking. Thus for many years, in the General Land Office and in the various courts, settlement of land claims originating during Spanish or Mexican sovereignty was a major function. The work of the Private Court of Claims, created in 1891

²⁶ The Texas grants are further discussed on p. 230.

primarily to facilitate settlement of land claims originating out of the Mexican Cession and the Gadsden Purchase, was completed in 1894 (74). The best available information indicates that there were more than 1,100 valid grants in California, New Mexico, and Arizona covering an area of more than 19 million acres.

Despite the fact that the average size of these grants was more than 17,000 acres and many were very much larger, most of those which are still used as range are in no better condition than the average of privately owned range lands. Here and there an outfit has realized the need for protecting the forage resource, but more often the ranges have been as seriously overstocked and as badly abused as on other private lands.

In contrast to the landed-aristocracy philosophy back of the Spanish and Mexican Land Grants, the public-land policy of the United States has been based on the democratic philosophy that all citizens should have an equal right to share in our land disposal. Small units only of sufficient size to support one family have been the objective. That the plan was successful in the humid agricultural region of the East can hardly be questioned. Had our range-land disposal legislation been so drawn and interpreted as truly to support this principle, it is possible that much less of our range land would have been so seriously depleted.

It is not the purpose of this report to trace through all of the land legislation of this country. There have been approximately 5,000 laws so classified (161). Certain laws or groups of laws have, however, had such an important bearing on range depletion that some special consideration of them seems essential.

THE HOMESTEAD LAWS

A land policy for the United States was first formulated by Alexander Hamilton, who believed that the public lands, if sold in small tracts to settlers, would furnish a very great source of revenue for the Government. Although emphasis in the early land ordinances was placed on the revenue feature (154, p. 637) there was very general recognition that the price must be kept sufficiently low as to be no hindrance to rapid colonization. Revenue, as a major factor in land disposal, survived for only a short period, but the belief that all lands should pass to private ownership in small tracts became firmly fixed (74). Laws designed to pass title direct to the settler were made less restrictive with each change.

The basic homestead law was passed in 1862 prior to the settlement of the semiarid range country west of Omaha, which was still "the Indian country." To be sure gold had been discovered in California, Montana, Idaho, and Colorado, and a flourishing agriculture was growing up in the valleys around these camps. The missions throughout the West had established themselves primarily on a basis of irrigated crop agriculture and livestock husbandry. Yet settlements were few and far between and the hardships of the Oregon and Santa Fe Trails were too real to encourage any thought of wholesale settlement. And then came the cattle.

Herds, as discussed in another section, built up around the demand for beef in the camps and for oxen to replace worn-out animals in the immigrant trains, expanded and made their owners independent. Texas cattlemen, without a market for their surplus stock after the Civil War, discovered the possibility of trailing to better ranges to the north for fattening. In the span of a few years almost the entire West was explored and stocked—overstocked—with cattle.

Many of the ranches experimented with crop raising around headquarters, mainly to winter the saddle stock and a few milch cows. Gardens were grown. Far-sighted stockmen soon realized that effective control of their range was tied in with control of the available stock water. Legal possession was essential to permanence in the right to use such key tracts. The 160-acre homestead law was the best way out.

Even though one man could acquire only 160 acres under this law, it was simple enough and not too questionable morally, to have a cow hand file and prove up on another key tract while working for the outfit. If he slept in the shack or sodhouse once in a while, had an old stove and some tin dishes and left a worn-out shirt hanging on a nail, it certainly was his home. There were plenty of cow punchers and plenty of others who were glad to make a few dollars by proving up on a claim. Then someone discovered that he had a key tract and no legal obligation to transfer the title which he got from the Government. So he "upped the price" and made a real stake. Another, more ambitious, decided that with his homestead, which included the only water for miles, he was a potential cowman and bought a few head of cattle. A new outfit was in the livestock business. Thus the principle of passing title to a sufficient area to support a family was never applied in the range country even from the beginning of settlement.

Gradually the news spread that there was opportunity in the Plains country and the rush of homesteaders began. That the land was ill suited to crop agriculture and that 160 acres would not support a family did not worry the settlers and apparently did not influence the administration of the law. Data segregating from the rest of the United States the homestead history of the range States are not available. However, the bulk of the lands in the tall-grass prairies and eastward had passed to private ownership before 1870. Thus table 40 and figure 61 give a fair indication of the rate of homesteading in the semiarid West. The phenomenal increase in acreage patented in the period beginning in 1913 was due to a liberalization of the law which permitted proof to be made after 21 months of residence, instead of after 5 years. This was known as the 3-year homestead law of 1912.

TABLE 40.—*Final homestead entries from passage of act to June 30, 1935*¹
(commuted homesteads not included)

Fiscal year	Number of entries	Area, acres	Fiscal year	Number of entries	Area, acres
1868	2,772	355,086	1902	31,627	4,342,748
1869	3,965	504,302	1903	26,373	3,576,964
1870	4,041	519,728	1904	23,932	3,232,717
1871	5,087	629,162	1905	24,621	3,419,387
1872	5,917	707,410	1906	25,546	3,526,749
1873	10,311	1,224,891	1907	26,485	3,740,568
1874	14,129	1,585,782	1908	29,636	4,242,711
1875	18,293	2,068,538	1909	25,510	3,699,467
1876	22,530	2,590,553	1910	23,253	3,795,863
1877	19,900	2,407,828	1911	25,908	4,620,197
1878	22,460	2,662,981	1912	24,326	4,306,069
1879	17,391	2,070,842	1913	53,252	10,009,285
1880	15,441	1,938,235	1914	43,724	9,291,121
1881	15,077	1,928,205	1915	37,343	7,180,982
1882	17,174	2,219,454	1916	37,958	7,278,281
1883	18,998	2,504,415	1917	43,727	8,497,390
1884	21,843	2,945,575	1918	41,319	8,236,438
1885	22,066	3,032,679	1919	32,623	6,524,760
1886	19,356	2,663,532	1920	39,774	8,372,696
1887	19,866	2,749,037	1921	33,889	7,726,740
1888	22,413	3,175,401	1922	30,919	7,307,034
1889	25,549	3,681,709	1923	22,420	5,594,259
1890	28,080	4,060,593	1924	18,046	4,791,436
1891	27,686	3,954,588	1925	14,675	4,048,911
1892	22,822	3,259,897	1926	12,244	3,451,106
1893	24,204	3,477,232	1927	9,315	2,583,627
1894	20,544	2,929,947	1928	6,667	1,815,549
1895	20,922	2,980,809	1929	6,240	1,700,950
1896	20,099	2,790,243	1930	4,973	1,371,073
1897	20,115	2,778,404	1931	4,848	1,352,861
1898	22,281	3,095,018	1932	4,077	1,209,894
1899	22,812	3,134,140	1933	3,066	906,578
1900	25,286	3,477,843	1934	3,608	1,123,673
1901	37,568	5,241,121	1935	4,902	1,640,393

¹ Data from U. S. Department of the Interior, General Land Office.

The use of water for irrigation at the mouth of mountain valleys proved so successful that this scheme of crop production in the semiarid region took gradual form. Where the cost of water diversion was beyond the means of one settler, groups combined to share the expense. From small beginnings this procedure has grown to large proportions and the Federal Government now finances projects through the Reclamation Service. That this development has been the major contribution to permanent crop agriculture in the West is generally recognized. Low-value, semiarid land, worthless except for natural forage, has been converted through irrigation into some of our most productive communities. To a large degree the successful use of adjacent range lands is dependent upon the forage raised in irrigated valleys. But there is a limit to the lands so situated that irrigation is feasible or possible; and even more important, there is a limit to the water available. There is little criticism against the homestead laws as applied to lands on which irrigation was practical.

As stated above, only a small part of the western range States can be irrigated (159). In Montana only 1.7 percent of the total land area has been placed under irrigation and not more than 2.8 percent can be so utilized. In Utah the corresponding percentages are 2.5 and 3.3. Even in California where the markets are close at hand and the climate is such as to permit of raising semitropical fruits, only 4.8 percent has been placed under irrigation to date.

And then someone discovered that dry-land farming was a possibility, and that under the influence of favorable years these virgin

grasslands could be made to grow wheat. That it had taken nature centuries to build up a few inches of fertile topsoil, that frequent and severe drought would result in crop failure, that the "summer-fallowing" practice was likely to facilitate wind erosion just as much as moisture conservation—these facts were not realized. Millions of acres of excellent native grassland passed to private owner-

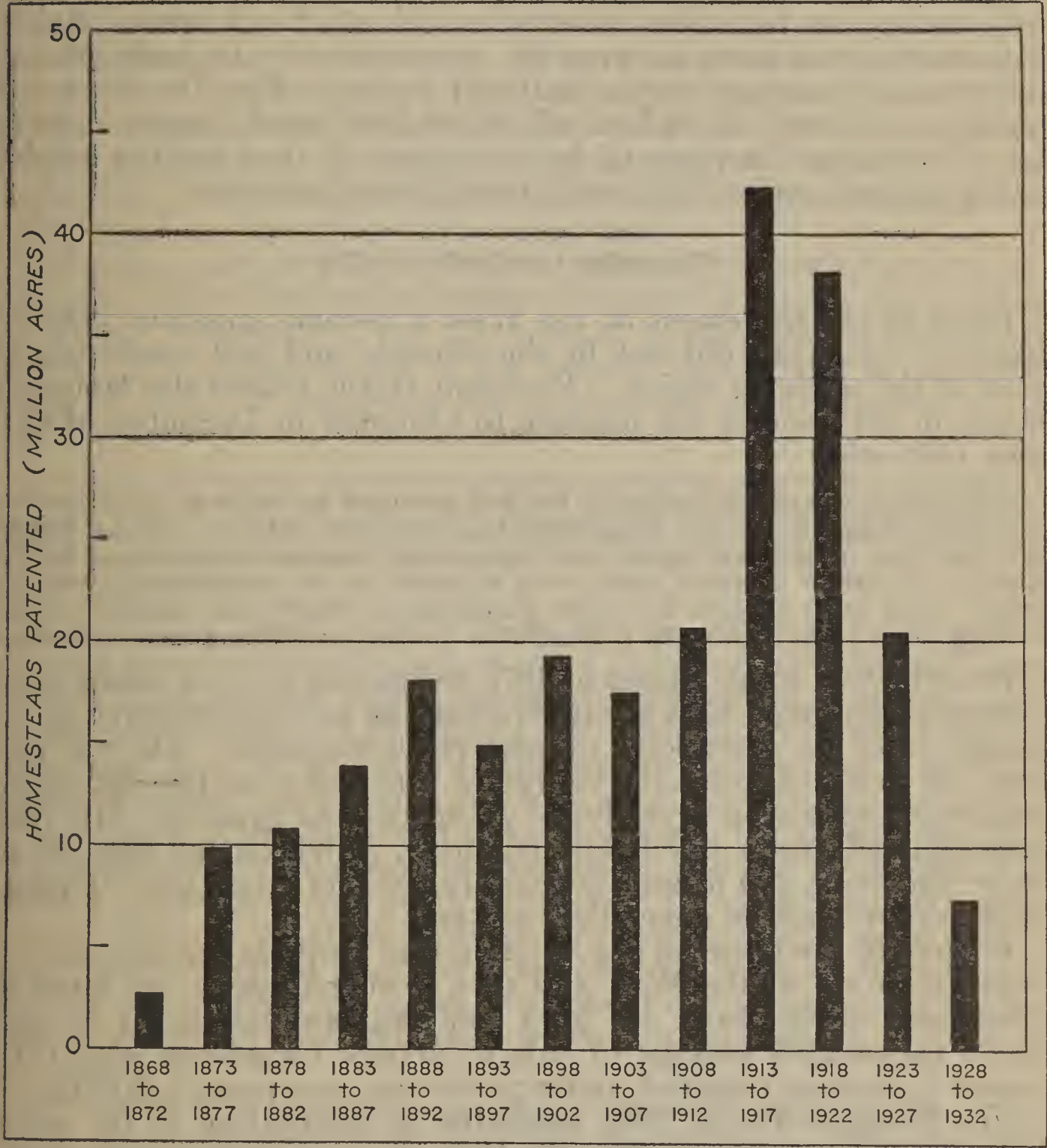


FIGURE 61.—THE RISE AND FALL OF HOMESTEADING IN THE WEST.

Homesteading east of the short-grass country had already slackened by 1868. These bars showing the acreage patented up to 1933 indicate, in the main, the sweep and decline of range-land homesteading. The sharp advance in the 1913-17 period is largely explained by the passage of the so-called Three-year Homestead Act of 1912.

ship under the homestead laws in a disastrous attempt to do what nature would not permit. Other millions of acres were filed on and broken up but were abandoned even before patent was issued. To-day the semiarid West is dotted with abandoned shacks where a worn-out tractor stands back of the fallen-down barn, witnessing what has proved to be the crowning mistake of an attempt to force low-value lands into private ownership for crop agriculture.

Since the effects of the homestead law on the range resource cannot be segregated from the effects of all land-disposal laws, detailed discussion will be reserved for later presentation; but this much should be said here: The homestead law made no provision for adequate classification of the land to determine its suitability for crop agriculture. There is valid question whether this lack of a specific mandate need have prevented such action, but in any event no means was worked out by which waterholes and other key areas could be withdrawn from entry as were the power sites in the early part of the twentieth century on the national forests. Also the income of registers and receivers of land offices has been based largely on number of entries and acreage of land disposed of, thus further emphasizing disposal rather than sound principles of land use.

ENLARGED HOMESTEAD ACTS

Early in the settlement of the West it became apparent that the 160-acre homestead did not fit the climatic and soil conditions of most of the semiarid region. President Grant visited the Mountain States in 1875 and in his message to Congress in December of that year (59) said:

In territory where cultivation of the soil can only be followed by irrigation, and where irrigation is not practicable the lands can only be used as pasturage, and this only where stock can reach water—cannot be governed by the laws as to entries as lands every acre of which is an independent estate of itself. Land must be held in larger quantities to justify the expense of conducting water upon it to make it fruitful or to justify utilizing it as pasturage.

Powell (107) in his report of 1878 recognized the fact that a large acreage of irrigated land per individual was neither necessary or desirable from the standpoint of western development. He was perhaps the first to express the viewpoint that our land-disposal policy must coordinate crop agriculture, water use, and grazing. His plan contemplated group action for irrigation, provision for free use of water for stock, and a large acreage (2,560-acre minimum) of range land to round out an economic home unit.

In spite of the growing appreciation that crop agriculture was unsuited to much of the West and that economic range use must be substituted as the basis for land disposal, laws continued to pass which encouraged passage of title to private ownership with little regard to the area required, under proper use, to support a family.

The Kinkaid Act of 1904, restricted in application to the excellent grazing country of western Nebraska was intended to maintain the fundamental principles of the homestead idea. The House Public Land Committee (74) in recommending its passage said:

Increase in the area of homestead above that provided by the original Homestead Law—made with the view of compensating the homesteader, in a measure, in quantity of land for what the land lacks in quality and productiveness.

Within 10 years after the passage of the act, which increased the area of the homestead to 640 acres, practically all available lands under the act had been entered. That this act did not accomplish the purpose for which it was passed is established by the fact that much of the land of the original "Kinkaiders", long since abandoned for cropping, has been included in larger units for strictly range use.

The Enlarged Homestead Act of 1909, originally restricted in application to 9 States but later broadened to include 12, was even less wisely conceived. In the first place the homestead size was limited to 320 acres. It provided that one-fourth of the area be cultivated, that residence be the same as on all homesteads, and that none of the land be irrigable. Clearly the law was intended to include grazing lands, usually as pasturage for 160-acre homesteads already occupied. Yet it placed a premium on dry-farming through the requirement of cultivation. Although less than 3 million acres was acquired under the provisions of this act, it had a bad effect on range management in that it provided one more method for breaking up into very small units grazing lands which could not economically be so handled, and encouraged the plowing under of good forage in order to get title to the land.

Irrigation was first made into a cooperative institution by the Mormons under that able colonizer, Brigham Young. That special legislation was required for this type of development was soon apparent. The Commissioner of the General Land Office in his report for 1875 (162) in discussing the application of this system to the land, said:

For their reclamation a system necessarily expensive, because involving canals or main ditches of great length and size, is required; and, hence, associated capital must be called upon to furnish the means of success. But the security for its repayment, even the inducement to furnish it, must be found in the lands to be benefited.

The solution offered by this report was the public sale at the Government price of suitable lands west of the one hundredth meridian.

The first legislation passed specifically to advance irrigation agriculture was the Desert Land Act of 1877 (74) which provided for the sale of 640 acres of land to a settler who would irrigate it within 3 years. Payment of 25 cents per acre was required at the time of filing and \$1 at the time final proof was made. Although less than 10 million acres have gone to patent under this act, it has served as another approach to misuse of the range. By making desert entries only on the land which included water holes, stockmen could control large tracts of range land for a period of 3 years at a very small cost per acre. Thus, the acreage patented is no measure of the extent to which this law was used in the competition for control of the range.

It is significant that ample provision to correct many of the abuses which were prevalent under this law was made in 1888. At that time a law was passed (74) which directed that all lands selected as sites for reservoirs, canals, and ditches and all lands susceptible of irrigation by such means be withdrawn from entry. Despite this sweeping bit of legislation, no constructive action was taken to correct the situation.

THE GRAZING HOMESTEAD LAW

Shortly after the cattle boom of the eighties, farsighted men began to realize that the range resource was not in fact inexhaustible. Reports began to spread that the ranges were overcrowded and as a result were being permanently damaged. In recognition of this, President Theodore Roosevelt in 1903 appointed a commission con-

sisting of W. A. Richards, Commissioner of the General Land Office, F. H. Newell, Chief Engineer of the Reclamation Service, and Gifford Pinchot, Forester of the Department of Agriculture, to make an investigation, report upon conditions, and recommend such changes as were needed in the land laws. The report of this commission (146) submitted by the President to Congress in 1905-6 clearly set forth what was happening:

The general lack of control in the use of public grazing lands has resulted, naturally and inevitably, in overgrazing and the ruin of millions of acres of otherwise valuable grazing territory. Lands useful for grazing are losing their only capacity for productiveness, as, of course, they must when no legal control is exercised.

Included in this report were the results of a study made by A. F. Potter, who through extremely wide acquaintance with stockmen of the West, was able to get an expression of opinion from some 1,400 stockmen well distributed over the range States. The preponderance of the expressions were favorable to some sort of Federal administration of grazing on the public domain. This coincided with the views of the commission. They made such a recommendation and strongly urged that the range lands be withdrawn from selection under the homestead and desert homestead laws. No constructive action was taken. On the contrary, by 1916 pressure became so great that the most unfortunate of the land-disposal laws as applied to range lands was enacted, the Grazing Homestead Act.

Instead of recognizing the similarity in principle between the treatment required for timber lands and that required for low-value range lands and providing a companion act to the Forest Reserve Act passed in 1891, we clung to the private-ownership philosophy.

Bad as have been the effects of this law, there was within it one provision subject to an interpretation which could have prevented most of the difficulty:

The Secretary of the Interior is hereby authorized, on application or otherwise, to designate as stock-raising lands subject to entry under this act, lands the surface of which is, in his opinion, chiefly valuable for grazing and raising forage crops, do not contain merchantable timber, are not susceptible of irrigation from any known source of water supply, and are of such character that 640 acres are reasonably required for the support of a family.

The actual interpretation which has been given the above clause has been so completely at variance with that contemplated at the time the law was passed that some discussion is essential. A study of the facts has been made by Dr. E. A. Sherman, Assistant Chief, United States Forest Service, who says:

Associate Forester Albert F. Potter, on December 9, 1916, while the measure was in conference, called the attention of Assistant Secretary of the Interior Finney to the above language, and suggested that the last clause be amended to read, "and are of such character that 640 acres may reasonably be expected to support a family." Mr. Finney reported that Secretary Lane (Interior) approved the change, and, under instructions from Secretary Houston (Agriculture), Mr. Potter presented it to Congressman Scott Ferris, who called the conferees together and secured favorable consideration of Mr. Potter's proposal. All of the conferees were in favor of the amendment, but ruled that it would be subject to a point of order, and it was therefore not included. Congressman William Kent, of California, opposed the measure in conference because he was fearful that as worded it would permit the classification of all lands which were not of a character on which a man could make a living on less than 640 acres. This resulted in a conference with Assistant Secretaries

Finney and Vogelsang, Mr. Mahaffey, Forester H. S. Graves, and Associate Forester Albert F. Potter. The representatives of the Department of the Interior contended that the Secretary of the Interior was given a wide discretion and need designate "only such lands as in his opinion were suitable for the purposes of the law", with the understanding that the lands to be designated would be passed on by the United States Geological Survey and would be of such a character that 640 acres "may reasonably be expected to support a family." The measure was thereupon accepted by the representatives of the Department of Agriculture. Mr. Kent withdrew his objection, and Secretary of Agriculture Houston advised the President that:

"The Secretary of the Interior is required to designate the lands as 'stock-raising lands' before they may be entered, and he can designate only such lands 'the surface of which is, in his opinion, chiefly valuable for grazing and raising forage crops, do not contain merchantable timber, and are not susceptible of irrigation from any known source of water supply, and are of such character that 640 acres are reasonably required for the support of a family.' As I interpret it, in order to designate such lands, the Secretary must of necessity have a classification made. He cannot permit any applicant to secure a homestead in excess of 640 acres, and he must have reasonable assurance that the 640 acres applied for will be reasonably required for the support of a family. I do not understand that there could be created under the act a homestead of 640 acres on which the entryman might not reasonably expect to support his family."

With the foregoing understanding, Secretary Houston raising no objection to the approval of the measure as finally passed, it was signed by President Wilson and became a law.

For a time the Geological Survey appears to have endeavored to adhere to the requirement that in order to be classified as subject to entry under the stock-raising homestead law the land must be capable of supporting a family on 640 acres and millions of acres were so classified, but political pressure resulting in adverse rulings by the Department forced abandonment of the policy for a rule-of-thumb requirement that the land be capable of supporting not less than 30 head of cattle yearlong for each 640-acre entry. This was in turn abandoned for the same reasons, and most anything short of absolute desert was given stock-raising homestead classification. Testifying before the House Committee on Public Lands, February 18, 1934, Congressman Taylor, of Colorado, stated that up to June 30, 1933, 24,326,349 acres of land had passed to patent, and an additional 124,669,640 acres had been classified and designated as subject to the act.

The upshot of the whole matter was another outstanding example of a reasonably good law unwisely and improvidently administered. The Department of Agriculture had conceived the purpose of the bill to be the establishment of "stock-raising homes" and not "stock-raising entries."

The extent to which the stock-raising homestead law has been used is shown by tables 41 and 42. It is significant that of the more than 68 million acres entered under this law only approximately 26 million acres have gone to patent and only about 14 million acres are now pending. Thus nearly 28 million acres are represented by entries which were abandoned before proof was made. The financial and spiritual toll exacted from tens of thousands of families that were permitted to try a venture in which they were doomed to failure is a convincing confutation of the theory, "Let the purchaser beware."

TABLE 41.—Area (in acres) of stock-raising homesteads entered from passage of the Grazing Homestead Act to June 30, 1935 ¹

State	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927
Arizona.....	-----	104,001	136,016	385,381	213,376	157,225	102,535	98,278	66,219	122,113
California.....	-----	154,686	434,837	455,773	375,102	214,055	209,296	177,198	174,713	150,511
Colorado.....	959	814,639	1,009,288	1,088,833	792,790	618,066	373,406	223,007	198,355	259,426
Idaho.....	-----	112,513	479,202	514,374	394,324	224,673	169,502	146,942	181,406	178,200
Kansas.....	2,014	27,784	6,252	9,656	5,079	3,257	1,369	3,006	-----	-----
Montana.....	-----	314,512	1,013,928	1,047,699	1,286,300	482,610	372,906	248,884	282,694	287,590
Nebraska.....	-----	6,758	10,944	13,944	10,152	14,870	3,407	11,337	4,055	3,791
Nevada.....	-----	16,130	67,149	39,423	53,114	27,556	22,973	33,157	27,673	29,521
New Mexico.....	-----	1,811,873	843,127	1,977,738	1,612,167	947,404	567,434	396,871	380,490	499,921
North Dakota.....	80,542	14,425	55,029	14,291	15,483	23,877	5,462	4,979	8,528	2,640
Oklahoma.....	62,956	14,413	2,134	1,951	17,207	11,164	7,860	7,951	2,157	6,511
Oregon.....	-----	140,274	660,663	655,461	398,211	259,569	157,895	148,445	98,466	103,464
South Dakota.....	32,408	387,802	409,867	615,893	179,827	130,944	81,451	54,662	52,798	49,426
Utah.....	322	46,125	160,734	271,022	184,994	192,893	123,535	133,404	233,272	218,482
Washington.....	-----	73,391	89,311	26,278	73,470	30,756	15,871	20,157	14,410	8,476
Wyoming.....	33,507	1,382,454	2,708,126	3,018,649	1,345,021	843,484	550,119	509,103	444,551	651,185
Total.....	212,708	5,421,780	8,086,607	10,136,366	6,956,617	4,182,403	2,765,021	2,217,381	2,169,787	2,571,326

State	1928	1929	1930	1931 ²	1932 ³	1933 ⁴	1934 ⁵	1935 ⁵	Total
Arizona.....	-----	271,849	303,480	274,111	233,821	149,468	122,646	42,179	2,953,298
California.....	-----	162,056	221,597	140,911	146,018	116,771	83,819	35,794	3,406,407
Colorado.....	-----	271,997	312,963	272,270	223,881	169,588	165,928	63,495	7,080,755
Idaho.....	-----	160,242	179,459	201,174	152,280	102,563	137,314	51,007	3,520,544
Kansas.....	-----	319,254	421,330	381,033	321,065	218,729	258,647	-----	58,417
Montana.....	-----	7,144	5,870	6,279	3,261	3,095	-----	104,659	7,650,833
Nebraska.....	-----	32,406	37,020	21,205	20,857	21,734	8,165	-----	108,313
Nevada.....	-----	808,027	1,013,595	1,299,401	1,036,415	648,012	716,009	945	493,122
New Mexico.....	-----	2,913	8,072	12,309	14,571	7,334	11,679	291,676	15,536,108
North Dakota.....	-----	-----	-----	-----	-----	-----	-----	9,861	280,003
Oklahoma.....	-----	-----	-----	-----	-----	-----	-----	-----	71,348
Oregon.....	-----	118,615	110,803	137,598	76,421	60,794	86,230	37,742	3,351,224
South Dakota.....	-----	52,792	52,446	40,395	48,574	30,539	50,773	41,051	2,362,663
Utah.....	-----	266,485	213,602	189,813	161,397	91,902	75,987	27,185	2,765,694
Washington.....	-----	4,567	8,409	14,475	6,581	5,969	3,979	2,669	407,093
Wyoming.....	-----	986,605	1,061,763	1,061,089	971,825	665,304	778,439	326,729	18,050,803
Total.....	2,665,829	3,464,952	3,950,409	4,052,063	3,416,967	2,291,802	2,499,615	1,034,992	68,096,625

¹ Report of Committee on Conservation and Administration of the Public Domain (35), pp. 41-42.

² Annual Report of the General Land Office, 1931 (163), pp. 74-75.

³ Annual Report of the General Land Office, 1932 (164), pp. 76-77.

⁴ U. S. Department of the Interior, General Land Office. Annual Report of the Commissioner of the General Land Office to the Secretary of the Interior, 1933. 103 pp., 1933. Typewritten.]

⁵ Statistical Abstract of the United States, 1934 (160), p. 126.

TABLE 42.—Area (in acres) of stock-raising homesteads patented fiscal years 1919 to 1935 ¹

State	1919	1920	1921	1922	1923	1924	1925	1926	1927
Arizona	320	9,990	56,099	75,845	58,213	73,562	101,402	66,592	100,398
California	-----	4,248	34,783	82,243	135,626	153,831	127,436	140,538	162,849
Colorado	1,451	34,173	144,210	388,476	360,092	385,276	337,623	399,009	323,876
Idaho	-----	6,701	30,379	55,645	61,102	85,359	91,121	126,268	112,028
Kansas	200	9,240	9,017	12,821	4,389	5,525	3,288	2,878	900
Montana	-----	29,940	144,199	328,416	304,255	325,155	327,807	313,335	370,112
Nebraska	-----	-----	680	4,338	5,921	10,919	4,332	8,400	6,318
Nevada	-----	-----	-----	2,400	10,953	15,301	15,210	16,776	23,089
New Mexico	1,597	87,376	233,353	451,778	431,319	516,603	416,019	351,537	439,649
North Dakota	751	13,738	16,565	14,345	15,207	15,272	6,047	7,814	4,816
Oklahoma	-----	-----	1,402	3,782	3,841	5,210	2,786	4,788	5,586
Oregon	-----	9,714	67,933	142,018	151,902	207,170	165,747	195,031	149,541
South Dakota	-----	58,399	169,745	217,606	141,702	207,021	154,467	151,764	83,835
Utah	-----	-----	478	10,677	6,522	27,623	32,306	55,997	73,514
Washington	-----	2,050	16,358	19,408	32,493	24,601	23,011	24,379	27,582
Wyoming	620	110,497	324,392	1,110,020	867,063	873,731	696,260	648,574	495,870
Total	4,939	376,066	1,249,593	2,919,818	2,590,600	2,932,159	2,504,862	2,513,675	2,399,963

State	1928	1929	1930	1931	1932	1933	1934	1935	Total
Arizona	36,876	63,012	54,817	58,931	64,084	62,236	56,776	104,375	1,043,528
California	100,171	98,216	62,282	80,431	83,994	67,187	50,917	58,887	1,443,639
Colorado	192,658	142,604	125,836	136,767	126,283	111,282	40,399	98,654	3,348,669
Idaho	51,988	69,915	60,521	44,319	55,114	44,081	22,212	51,119	967,867
Kansas	925	649	200	160	400	320	160	720	51,792
Montana	220,984	195,040	160,685	125,691	126,696	67,174	81,820	101,541	3,222,850
Nebraska	4,127	3,802	4,833	1,382	1,715	3,215	4,013	2,026	66,051
Nevada	13,629	13,614	13,453	11,538	12,586	7,372	4,257	4,902	165,080
New Mexico	237,043	287,216	194,539	201,783	180,192	222,061	157,425	285,531	4,715,021
North Dakota	5,157	2,598	3,585	3,054	2,509	-----	901	3,576	115,935
Oklahoma	3,037	1,980	3,065	1,169	3,482	282	595	545	41,550
Oregon	53,384	54,472	52,577	50,512	39,099	15,403	28,257	26,578	1,409,338
South Dakota	60,903	48,461	30,389	20,284	20,108	22,500	7,876	16,341	1,411,401
Utah	49,369	52,772	61,469	67,177	59,952	56,032	31,628	31,865	617,371
Washington	17,769	14,236	8,769	6,897	9,751	1,599	2,237	3,466	234,636
Wyoming	338,860	301,636	217,981	241,497	313,650	204,631	237,346	258,535	7,241,163
Total	1,386,880	1,350,223	1,055,001	1,051,592	1,099,645	885,375	726,849	1,048,651	26,095,891

¹ Report of Committee on Conservation and Administration of the Public Domain (35), p. 43.

LAND SCRIPT, MINERAL LAWS, AND OTHER ACTS

Although the various homestead laws account for the great bulk of the land which has passed direct from the public domain to private ownership, many other methods to accomplish this purpose have been legalized. The issuance of script redeemable in land to be taken from the public domain has not been uncommon. Eastern States, not so fortunate as to contain public domain, and Texas, have been issued land script to the extent of 7,830,000 acres to be selected in public-land States for the support of education. Recognition of the obligation which the Nation owes to soldiers of the various wars has been met in part by the issuance of land script covering more than 1.6 million acres of public lands (35). These promises of lands were made transferable and therefore soon found their way into the channels of trade. During certain periods the buying and selling of script assumed major proportions on the stock markets. It is impossible to estimate the extent to which script was used in acquiring range lands, but it is well known that a great part was gathered in by timber companies as one means of bringing about the consolidation of ownership of the choicest timberlands of the West.

Mineral and coal land disposal under the various laws had taken less than 4 million acres by 1931. Although no objection is here raised to the validity of encouraging the development of mining by this method, it is unfortunate that the mining laws have at times been used for purposes not intended under the laws. Too often mining claims of questionable mineral value have been located in the heart of range units or to control the use of water. Thus proper range management has been made more difficult. Coordinated use of our natural resources, under which the needs of the mines and miners are given full consideration, would seem to be a more logical principle to follow than that of passing to patent or control a grazing resource in which the patentee presumably is only incidentally interested.

Many methods other than those discussed have been used to pass to private ownership title to range lands, but the principles involved and the effects on range depletion are similar. The Timber Culture Acts, the Timber and Stone Act, the Carey Reclamation Act, and the various cash-sale provisions are a few that should be listed even though space limitations prevent discussion.

RAILROAD AND OTHER INTERNAL IMPROVEMENT GRANTS

Perhaps the main deterrent to rapid settlement and development of the West was the lack of adequate transportation facilities. The idea that the disposal of public lands should aid in solving this problem was early conceived. Precedent for the use on a large scale of the proceeds from the sale of public lands is first found in the Enabling Act of the State of Ohio in 1802 (74). It provided that 5 percent of the gross receipts from such sales should be made available and used for the building of public roads. Following this, grants for transportation development were numerous. Some were made to States with stipulations as to how the money was to be used, but more frequently the grant was direct to the railroad as a subsidy to aid in financing the original construction. This phase

of our land-disposal policy reached its peak in the sixties when the grants to the Union Pacific, Central Pacific, Northern Pacific, Santa Fe, and Southern Pacific were consummated. The magnificence of these subsidies soon raised so much opposition that the practice was stopped with the exception of relatively minor grants for the purpose of financing a few branch lines, connecting links, and to aid in consolidations. Altogether, as shown in table 43, more than 101 million acres were granted to States and corporations to advance railroad building in the range country. Figure 62 presents graphically their extent and location.

TABLE 43.—*Status of railroad grants*

State	Original grants ¹	Present ² holding railroads ³	Additional grants to States for railroad and wagon roads ⁴
	<i>Acres</i>	<i>Acres</i>	<i>Acres</i>
Arizona.....	8, 419, 505	⁵ 3, 770, 896	-----
California.....	11, 481, 459	2, 008, 461	-----
Colorado.....	3, 826, 881	34, 350	-----
Idaho.....	1, 015, 479	570, 148	-----
Kansas.....	7, 849, 592	4, 735	4, 634, 237
Montana.....	14, 342, 510	3, 516, 441	-----
Nebraska.....	7, 657, 737	18, 611	-----
Nevada.....	4, 988, 075	4, 440, 078	-----
New Mexico.....	3, 464, 049	⁶ 1, 437, 521	-----
North Dakota.....	10, 301, 912	16, 354	-----
Oklahoma.....	-----	3, 397	-----
Oregon.....	3, 489, 499	192, 559	2, 583, 890
South Dakota ⁷	-----	4, 953	-----
Texas ⁸	-----	136, 194	-----
Utah.....	2, 277, 839	673, 281	-----
Washington.....	9, 930, 543	1, 531, 596	-----
Wyoming.....	5, 104, 786	938, 603	-----
Total.....	94, 149, 866	19, 298, 178	7, 218, 127

¹ Bureau of Railway Economics unpublished data as of June 30, 1933.
² From unpublished data of Interstate Commerce Commission, 1934.
³ Exclusive of rights-of-way and urban property.
⁴ These lands were transferred to construction companies or railroads.
⁵ Includes 3,755,581 acres transferred to holding company for Atchison, Topeka & Santa Fe Railroad Co.
⁶ Includes 1,431,641 acres transferred to holding company for Atchison, Topeka & Santa Fe Railroad Co.
⁷ Small acreage included with North Dakota.
⁸ The railroad lands in Texas were direct grants by the State—total grants to railroads, 32,153,878 acres (142).

While the stipulations differed in the various grants, the usual procedure was to include all of the alternate sections for a distance varying as between grants from 10 to 40 miles on each side of the right-of-way. Provision was made for the selection of “lieu lands”, generally within 10 miles beyond this limit, in lieu of lands which had already been settled, were mineral in character, or for any other reason were not available to the railroad company. That the railroad grants accomplished their major purpose cannot be questioned. Transcontinental lines were financed and pushed through much sooner than they otherwise would have been.

In the final analysis these grants were intended to encourage passage of title to private owners in small tracts similar to the homestead law. Stipulations were usually included which controlled the price at which the land could be offered for sale and which required that it be offered by a certain specified time after construction. Table 43 shows that in the range States more than 19 million acres still remain in railroad ownership.

It is significant that in the administration of the railroad-grant laws the Federal land policy of passing of title to private ownership is clearly shown. Vigorous protests by the Forest Service against further patenting of land to the Northern Pacific Co. resulted in the passage of Public Resolution 24, Sixty-eighth Congress, on June 5,

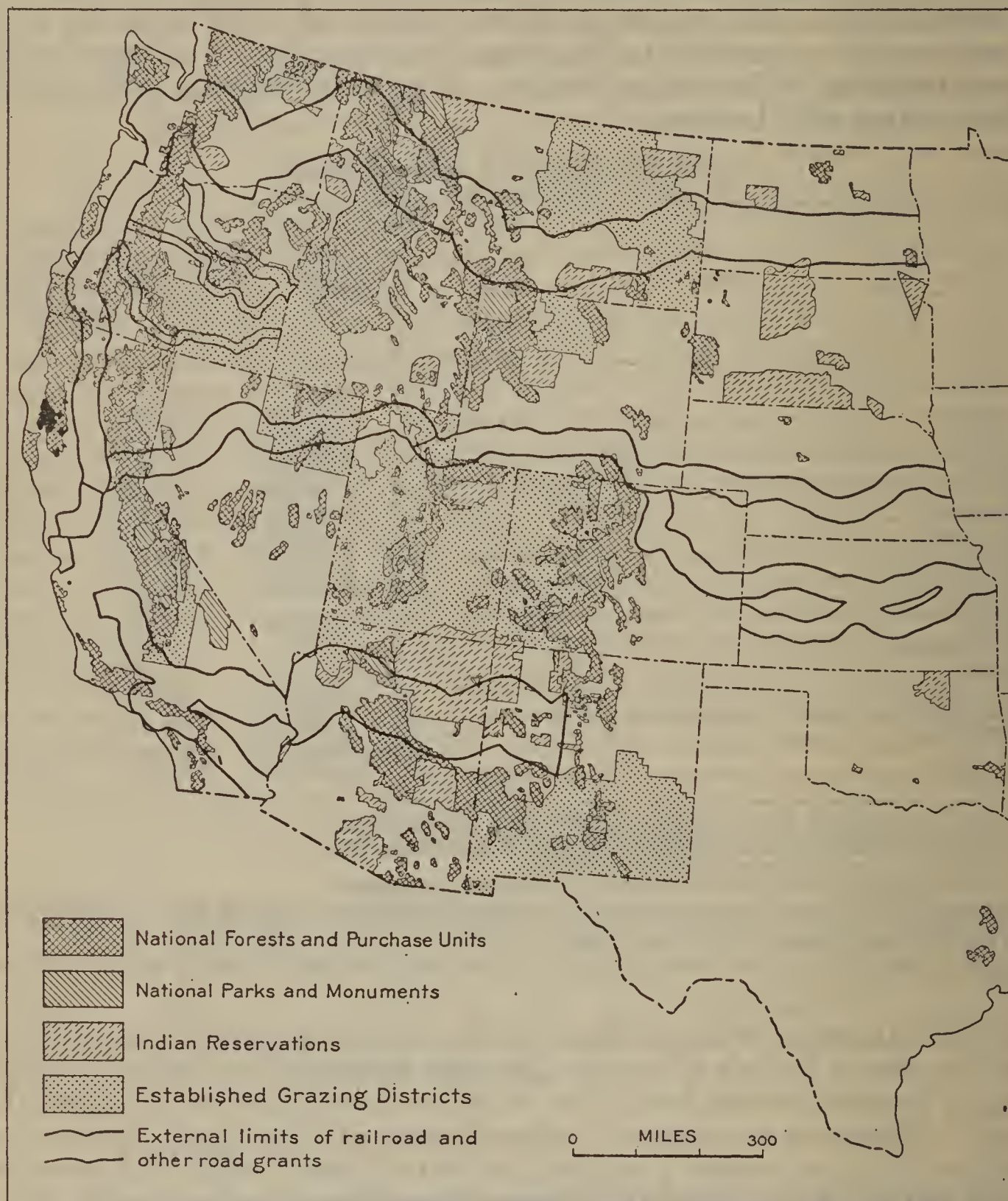


FIGURE 62.—HOW RAILROAD GRANTS COMPLICATED THE OWNERSHIP PATTERN.

The various railroad land grants of alternate sections within the limits shown above included an extremely large acreage of grazing lands. Federal reservations and withdrawals later overlapped these grants. These grants still complicate the ownership pattern.

1924. Among other provisions this resolution created a joint committee of both Houses of Congress to make a complete investigation of the Northern Pacific land grants. Hearings were held and the complete record was submitted to the Attorney General for analysis and advice. His findings (147) are summarized:

A consideration of the foregoing suggestions indicates that not only does no deficiency exist in the grants but that the company has already received approximately 5 million acres of public land which it has not earned and is not entitled to.

Final disposition of this case is still in the courts.

Naturally the land-disposal policy of the railroads has had two purposes: (1) The conversion of land into money and (2) the settlement at the most rapid rate of the territory served. High-pressure salesmanship was resorted to in furtherance of these aims. Certain roads even went so far as to open land offices in the capitals of Europe. Here was developed the land agents' viewpoint on a wholesale basis. Colonization schemes destined to failure were undertaken on a grand scale. The ease of irrigation, and the profits to be had from dry-land farming were presented in glowing terms. Thus many more millions of acres of typical range land, unsuited to crop agriculture, were put to the plow.

Fortunately the sales policy of most of those roads which still have lands to sell has reversed. It is now realized that, in the long run, the railroads can benefit only as the individual purchaser is successful. Misuse of the land is discouraged. Purchasers destined to failure because of inexperience are not solicited, and prices are set at the figure at which the purchaser has a chance to retain title. In most instances the railroads are in the vanguard of the movement to bring about some orderly plan of action which will insure stable and profitable use of the land. However, the checkerboard pattern of the railroad holdings makes difficult any sort of blocking up of range-land tenure in tracts of sufficient size to permit of economical livestock operations. In the establishment of one large grazing district in Montana, however, the Northern Pacific Co. took a leading part. Their own holdings, which were a large percentage of the total, were turned in to the grazing association at a very low rental price.

A part of the railroad lands are given relatively good management. Those sections which fall within the national forests usually can be used only in connection with adjoining lands. Thus they are usually leased by a national-forest permittee who turns them in to the Forest Service for a permit to graze the number of stock equivalent to the determined grazing capacity of the land.

Not much can be said in favor of the range practice required on most of the railroad lands. It consists simply in leasing the lands without restrictions as to numbers of stock to be grazed or the season during which the land may be so used. Presumably it is assumed that the lessor will protect the resource. As a usual practice the lands are first offered to the logical local user or users. If the lease is not thus taken up, the lands are then offered to the highest bidder, who more often than not secured the land for less than the annual taxes assessed against it. Much of the land is never leased at all, because it is so badly intermingled with other holdings that it cannot be protected from trespass.

STATUS OF LANDS REMAINING IN PUBLIC OWNERSHIP

TEXAS LANDS

The treaty of annexation of Texas, signed in 1845, provided, as already stated, that the new State would retain title to the lands within its borders. Thus we have an example of land disposal on a large scale by the individual State. That the land-ownership pattern of Texas is extremely complicated can be more readily understood if it is realized that previous to its annexation by the United States it had been, first, a Spanish Province, then in 1820 a part of the "State of Coahuila and Texas" under the Government of Mexico, and lastly, a sovereign independent nation.

The first title to land in Texas probably dates back to 1731 under a grant from Spain (87). From that date until 1819 various large and small grants were made by the Spanish Kings. In most instances the motive back of the grant was the extension of the Catholic religion and the colonization of the province. Although permanent settlements through Spanish efforts seem to have been a failure, it is estimated that private title to about 10 million acres of land ²⁷ goes back to this source.

The Mexican influence on land ownership in Texas is very pronounced. It too was designed to encourage settlement and perpetuate the ruling religion, but it did set up a land-disposal scheme which had some merit. Under it, with certain restrictions as to residence and citizenship, an area of land varying from 177 acres of tillable land to 4,251 acres of grazing land could be secured by one individual. In addition, anyone who would organize a colony of 100 or more families received a liberal reward in land. Though many minor changes and modifications were made, the system thus started remained in effect until 1845 as the land policy of the Republic of Texas. Under the system more than 16 million acres passed to private ownership.

Texas, as a State, as shown in the following tabulation (142), has used almost every known device except the lottery system in its public-land disposal.

	Acres
Grants by Spain and Mexico-----	26, 268, 000
State university-----	2, 221, 400
Kiamasha Road-----	27, 000
To build State capitol-----	3, 050, 000
County courthouses-----	640
San Jacinto Veterans-----	1, 169, 382
Disabled Confederates-----	1, 979, 852
Homestead donations (preemption)-----	4, 847, 136
Internal improvements-----	4, 061, 000
Counties for schools-----	4, 229, 166
Headright and bounties-----	36, 876, 492
Colonies-----	4, 494, 806
Railroads-----	32, 153, 878
Asylums-----	400, 000
Public free schools-----	42, 400, 556
Total-----	164, 191, 308

²⁷ Some estimates are as high as 20 million acres (87).

Free homesteading has been encouraged, soldiers have been reimbursed in land and in land script, construction companies were paid in land for the construction of public buildings, large quantities were donated for internal improvements, it has been sold outright as a means of raising revenue, and an enormous area has been used to endow the public schools and institutions of higher education. Thus the land history of Texas is similar to that of the Nation except that more consideration was given to the relationship of size to intended use. That private range lands in Texas have been depleted to substantially the same degree as have those in adjoining States is evidence that size is not the only answer to the proper use of such a resource. Current profits, inadequate finances, and failure to consider the forage as a renewable resource seem to have controlled here as elsewhere.

Those lands which remain in the various forms of State or institutional ownership are managed primarily for the greatest current revenue. No adequate provision has been made in leases and use agreements to perpetuate watershed values of the range forage resource at a permanent high level. Cents per acre rather than carrying capacity has controlled in large measure.

In all of the range States except Texas, State ownership of land largely goes back to Federal grants for educational purposes or for public or semipublic improvements.

STATE GRANTS

That the use of public lands for educational purposes and for essential public improvements was a laudable purpose has been demonstrated. Our common-school system, our land-grant colleges, and our other favored institutions have benefited greatly. That they might have benefited more in the long run under a plan of land management which would have protected the range resource for both present and future generations seems equally clear.

Proposals that a portion of the public lands or of the receipts from the sale of public lands be distributed to the States probably originated in 1824 when a proposal was made that money from the sale of lands be invested, and the interest therefrom be distributed among the States. The following year a congressional committee was appointed to investigate the possibilities of such a plan with special reference to the possibility of using the money to finance a public-school system and of the effect of such a plan on the colonization and development of the United States (74). The committee report was favorable, but the question was destined to occupy the middle of the political stage many years before the principle was finally accepted.

It is not the purpose of this report to present the detailed history of Federal grants to the States of lands or money from the sale of lands. The system was followed and has done much to foster the cause of education and public improvements. Table 44 shows the extent of such grants and present ownership in the western range States.

TABLE 44.—*State land status for 17 entire Western States*

State	Original grants	Total present ownership	Range land owned	Range land leased	Administrative agency of State lands
	<i>Acres</i>	<i>Acres</i>	<i>Acres</i>	<i>Acres</i>	
Arizona.....	10,542,113	8,356,497	8,242,497	7,380,000	State land commissioner.
California.....	8,427,077	1,040,594	448,360	20,499	Division of State lands, department of finance.
Colorado.....	4,433,538	3,182,102	2,925,737	2,426,165	State board of land commissioners.
Idaho.....	3,632,157	2,881,285	1,291,338	1,798,964	State board of land commissioner's department.
Kansas.....	3,606,910	71,302	71,302	None	State auditor's office.
Montana.....	5,869,618	4,861,998	4,219,998	2,982,985	Department of State land and investments.
Nebraska.....	3,458,711	1,724,143	1,574,143	¹ 1,601,549	Commissioner of public lands and buildings.
Nevada.....	2,723,647	126,587	117,587	² None	Surveyor general and State land register.
New Mexico.....	12,732,694	12,697,651	12,186,651	³ 10,700,000	Commissioner of public lands.
North Dakota.....	3,163,551	1,855,055	1,556,901	1,173,432	Commissioner of university and school lands.
Oklahoma.....	3,095,760	989,880	469,880	137,641	Commissioner of State land office.
Oregon.....	4,375,429	611,927	540,767	29,524	State land board and rural credits department.
South Dakota.....	3,434,203	3,931,059	3,356,346	2,623,427	Commissioner of school and public lands.
Texas.....	-----	22,425,903	19,964,436	2,270,285	General Land Office of Texas.
Utah.....	7,464,276	2,800,000	2,297,300	287,861	State land board.
Washington.....	3,044,471	2,230,796	1,196,976	468,522	State land commissioner of public lands.
Wyoming.....	4,138,569	3,567,242	3,222,242	3,050,058	Commissioner of public lands and farm loans.
Total.....	84,142,724	73,354,021	63,682,461	36,950,912	

¹ Probably includes agricultural lands.² No State lands leased; all are sold outright or on long-time payment plan.³ Includes small percentage of agricultural lands.

As a result of apparent fraud in disposing of land in the earlier grants, most of the grants, or the State constitutions, placed limitations on freedom of action in disposing of the land. Obviously the main reason back of the restrictions was a fear that State governments would be dominated by political influence and as a result the lands would be disposed of as political or personal favors and at a fraction of their true value. Thus, in most grants, stipulations as to minimum selling prices and restrictions on sales are to be found. In several States the minimum price was so high in relation to resource values that it prevented disposal of any but the best land. Apparently the price set was based on the belief that all land would ultimately command a substantial price and on a desire to obtain all that the traffic would bear in State land disposal.

Regardless of the justification from other standpoints, range management on State lands has been seriously hampered by the scattered geographic distribution of the land over the States. The usual custom has been to designate sections 16 and 36 of each township as common-school land. In Arizona, New Mexico, and Utah sections 2 and 32 were also so designated. Only in Nevada was this problem avoided; here, in lieu of a grant of named sections, the State ultimately was given the right to select from any unreserved and unappropriated public lands 2 million acres for common-school purposes (74).

This distribution in small units, rather than in tracts of sufficient size for efficient administration, would go far toward preventing the

application of sound range management principles even if those responsible for the handling of such lands so desired.

The State of Nevada based the location of its school-land selections on salability, especially as influenced by the control of water, which was especially vital to the use of the range. Thus in this instance the State land furnished the key to the use of an immense area of surrounding public domain, and this explains in part why such a large part of Nevada's common-school land has passed to private ownership.

Attempts at consolidation of State land in the public-land States of the West in blocks large enough for management have been made with more or less success. The greatest aid to this endeavor has been the various lieu selection acts. Title to land granted the States did not pass until the lands were surveyed and the survey accepted. Meanwhile the State grant might be defeated as to a given area either by settlement prior to survey or by inclusion in some reservation in which case title did not pass so long as the land was reserved. To meet such situations equitably the States were given the right to select an equal area of nonmineral, unreserved and unoccupied, surveyed public land anywhere within the same State, regardless of value. This provision proved of great value, especially where national forest reservations embodied great areas of unsurveyed, rough mountain land. The theoretical school sections were promptly surrendered, and the best of the remaining unreserved public domain was selected instead.

In 1907, in order to facilitate and encourage consolidation and management of State lands, the Forest Service agreed to eliminate certain agreed-upon areas from the national forests for selection by the various States on an "equal area—equal value" exchange basis. In some States part or most of the selected land was primarily valuable for grazing. This was true in part in Montana, Idaho, Washington, Wyoming, New Mexico, and other States.

Likewise, in a few States exchanges of patented State lands within the national forests for other unreserved lands of equal area and value have aided materially in consolidation. That other States have not followed a similar course results in part from a lack of permissive legislation.

It should be added that in most grants, other than those for the support of the common schools, the States were permitted to select the specified area from any unreserved and unappropriated public domain. This was true with the large grants for the various State colleges and universities and for many internal improvements. In many instances these selections were made in blocks of large size.

In many of the States it has been the practice to invest the receipts from the sale or lease of State land in real-estate mortgages. A large part of these investments were made during the dry-farm boom and were for amounts which we now know were in excess of the actual worth of the land. Although foreclosures have been avoided when possible, some States have by this means acquired a substantial additional acreage of denuded lands and are destined to acquire much more. Here again the land distribution is in small units and serves to add to the confusing pattern of State land ownership.

The handling of State range land has been based almost wholly on a desire to secure the maximum current revenue.²⁸ Sale of the maximum acreage has been encouraged without regard for the fitness of the land for private ownership. Leasing has usually been with a view to securing the greatest possible price. No provision has been made for the protection of the range and watershed resources through wise management. A search through the last annual land report of all the range States fails to reveal any mention of the condition of the lands. Without exception they are mere financial statements made up largely of figures of acreages and dollars. The measure of success seems to be based entirely on the ability of those responsible for the lands to obtain the maximum revenue from lease or sale regardless of the effect on the resource.

In every case responsibility for administering State lands rests with those whose major function is revenue collection. In no instance has the land been turned over to an agricultural agency. Surprising as it may seem, even where a qualified State agricultural department is provided it has been permitted to have no part in State land management other than that which could be exerted indirectly through influence. Clearly, in the interest of good land management, the administration of State grazing land should be closely tied in with the interrelated agricultural interests. Sound land-use management requires this action.

To sum up: The distribution pattern of State lands is of such character as to complicate any attempts at improved range management. No provision at all to control numbers of stock or season of use is exercised in leases. Supervision of the use of the land is not provided. The responsible agency is primarily interested in securing the greatest current revenue through sales or leases. The services of existing qualified agencies such as the State agricultural departments, the agricultural experiment stations, and the Extension Service are little used.

INDIAN LANDS

The land ownership problem within the western Indian reservations, especially those of the Northwest, is little if any less complicated than with the land in other forms of ownership or control. Until very recently the objective in Indian administration seems to have been to lead or force the Indian to accept the same mode of living and standards of civilization that have proved to be satisfactory to the white man. This has included the principle of individual, private ownership of land as the ultimate solution. As a result, five distinct classes of land titles are intermingled on most of the reservations. This situation is fully discussed in another section (pp. 278-285) and therefore will not be repeated here. It should be said, however, that the resultant land-ownership pattern has been one of the major obstacles to the practice of proper range management on Indian lands. Progress in recent years has been encouraging and should be more rapid under the broad authority vested in the Interior Department by the Wheeler-Howard Act of 1932.

²⁸ This paragraph refers entirely to range lands and should not be construed as a criticism of the management of State forests and parks, which in some instances is very creditable.

REMAINING PUBLIC DOMAIN

Beginning late in the nineteenth century, a few farsighted individuals began to realize that for certain lands private ownership was neither feasible nor desirable. As a result, partly owing to public pressure but more largely to the political astuteness of certain conservation leaders, a large area of the remaining public domain has been withdrawn from all forms of entry and reserved for public management. Chief among these reservations were those creating the national forests, national parks and monuments, and power-site withdrawals. Also a great area has been reserved for such special purposes as Indian reservations, reclamation sites, stock driveways, and mineral reservations. Although there is a material amount of overlapping as between various reserves, their general extent, as recorded in the 1934 report of the Secretary of the Interior, is shown in the following partial tabulation:²⁹

	Acres
National forests-----	138, 120, 193
National parks and monuments-----	8, 692, 196
Indian reservations (estimated net)-----	56, 676, 535
Military, naval, and similar reservations (approximately)-----	1, 000, 000
Bird and game refuges-----	1, 512, 371
Stock driveways-----	9, 771, 386
Reclamation withdrawals-----	20, 208, 621
Water power reserves-----	5, 147, 654

As a residue from the combined effects of the land-disposal policy on the one hand and the reservation policy on the other, we still had, on July 1, 1934, 165,695,479 acres of unappropriated and unreserved public domain, of which 162,188,181 acres were in the range country. For the purposes of this section grazing districts as shown in table 45 are considered to be public domain.

TABLE 45.—*Public domain areas in the range States, included and not included in "grazing districts"*

State	Included in grazing districts	Not in- cluded in grazing districts	Total, public domain
	<i>1,000 acres</i>	<i>1,000 acres</i>	<i>1,000 acres</i>
Arizona-----	1, 505	11, 568	13, 073
California-----	1, 872	13, 804	15, 676
Colorado-----	6, 459	576	7, 035
Idaho-----	4, 182	5, 885	10, 067
Montana-----	3, 892	2, 018	5, 910
Nevada-----	7, 985	43, 194	51, 179
New Mexico-----	8, 776	2, 873	11, 649
Oregon-----	9, 561	679	10, 240
Utah-----	20, 045	1, 908	21, 953
Washington-----		710	710
Wyoming-----	1, 246	12, 825	14, 071
Kansas, Nebraska, North Dakota, Oklahoma, South Dakota, Texas-----		625	625
Total-----	65, 523	96, 665	162, 188

On June 28, 1934, the Taylor Grazing Act, which provides for some degree of public control of grazing on 80 million acres of the public domain, became a law. Although the restriction in acreage

²⁹ Fig. 62 shows the location and extent of some of the more important classes of federally owned or controlled land.

still leaves more than 85 million acres of Federal public land without provision for control, it seems inevitable that some sort of management will be provided very shortly. This can be provided through amendment to the Grazing Act to include the entire area, through a division of the area between this and other agencies in the interest of consolidation and conservation, or through a combination of these measures. Consideration of the good and bad features of the Grazing Act will be found elsewhere. It is necessary here to present the effects on the land pattern which this immense acreage of predominating range land exerts and to describe in some detail its condition and the reasons therefor.

The public domain of the West is made up of remnants left after careful culling by many agencies. The homestead, desert homestead, and grazing homestead laws eliminated much of the best of the natural range area. State, railroad, and other grants, with their provision for lieu selection of indemnity land, still further reduced the average quality. The national forests, Indian reservations, reclamation withdrawals, and so forth, each have absorbed grazing land better than that which remained. Clearly the residue of 165,695,479 acres consists of the least desirable of the original 1,442,220,320 acres. Certainly, it includes the poorest 10 percent of the lands west of the Mississippi River.

Not only is the land poor in quality but its geographic distribution often makes administration difficult. Except those semidesert, or extremely low-value areas where there was little demand for the land, it is scattered in units too small to administer separately and badly intermingled with other ownerships. As has already been emphasized, absolute lack of proprietorship on the public domain resulted in the worst kind of abuse through overgrazing and use during improper seasons. Wherever there is any public domain used as open range, it is in virtually every instance in a more advanced state of depletion than similar land under any other form of ownership.

Along with forage depletion has gone, more often than not, the top soil, and along with it the soil fertility. The forage and soil resource is generally so badly deteriorated that the land has lost not only its grazing values but also its ability to regulate run-off and prevent erosion.

REASONS FOR DELAY IN ADOPTING A CONSTRUCTIVE RANGE-LAND POLICY

Failure to correct the evils of our Federal range-land policy is hard to understand. As early as 1878, Lieutenant Powell, then Chief of the Geological Survey, after a rather thorough field examination, prepared a report on the necessity for revising our land laws to fit conditions in the semiarid West. His report (107), with remarkably clear foresight, pointed the way for future action. He recognized the desirability of combining range and irrigable land, of the protection of water holes for widest possible use, and of preventing nonirrigable lands from going into crop agriculture. No action was taken.

In 1898 the American National Livestock Association, well knowing that the range resource was being destroyed, passed resolutions

asking that the public domain be given protection from overgrazing. No action was taken.

In 1903 President Theodore Roosevelt, fresh from his experiences in Dakota and Montana, realizing keenly the impaired condition of the range resource, appointed a Public Land Commission to investigate and report. This Commission after much testimony and travel reported not only what would happen but what had already happened. It recommended, as suggested by many progressive stockmen, that the remaining public domain be withdrawn from entry and placed under Federal administration with provision for homesteading after careful land classification. No constructive action was taken. In due time additional laws were passed designed to facilitate rather than prevent further damage.

In 1930 President Hoover appointed the Committee on the Conservation and Administration of the Public Domain. Another study was made and another recommendation for placing the public domain under administration. In this instance primary emphasis was placed on transfer of the land to the States where they so desired and where proof of ability and intention to protect the resource could be given. Mineral rights were to be reserved to the Federal Government. In those States not caring to assume the heavy responsibility of rehabilitating these run-down lands, administration by the Federal Government was recommended. Also the remaining forest lands, high-value watershed lands, and units desired to block out administrative divisions, were to be added to the existing national forests. It is probably fortunate that several of the recommendations of this report were never translated into law.

Finally in 1935 after a half century of delay and failure to act realistically on the public-domain range problem, and after untold damage to the range and to the livestock industry had resulted, less than half of the remaining public domain was placed in the way of administration. The remainder, together with nearly 25 million acres of unperfected homestead claims, remains a "no man's land."

Why the delays? The reasons are obscure and may be conflicting. First of all has been the ever-present fear of oppressive bureaucracy. The idea of placing in the hands of some governmental agency the final say as to the use of lands which heretofore have been used without hindrance, was distasteful to many of the pioneer American stockmen. Perhaps in no business has the spirit of rugged individualism been more strongly displayed. From the days of the Texas trail herds on down to the present depression, the business has been highly individualistic. The motto has been, "Let the best man win." As a result, the stockmen were unable to unite on a solution behind which they could mass their full strength.

The State rights argument has likewise been used to prevent action. Even though the management of State lands more often than not has been on a political basis with no apparent regard for the permanence of the resource, there has been a strong following for transfer of the public domain to the States. That, in their present depleted condition, management and rehabilitation of these lands would constitute a liability rather than an asset, seems not to have been realized. The fact that some receipts were being obtained from lands already in State ownership easily led to the

assumption that the ownership of the public-domain lands would increase this revenue. Partisan politics, especially within some of the States concerned, has made good use of the State rights principle at the expense of the perpetuation of the range and watershed resource.

Another feature in the delay has been a possible advantage which the stockmen have seen in keeping the situation such as to afford an opportunity to play one form of Federal control against another. That this is true is evidenced by the situation today when the division of Federal responsibility between two departments is being so used.

Always, of course, the question of the fee to be charged for use of the range has played a part far beyond its true importance. The cost to the stockman of equitable fees, as against insecurity in the use of range, losses from overstocking of ranges, and damage which results from erosion and unregulated stream flow from such areas, should be quickly accepted as the only reasonable alternative.

Transcending all of these, however, has been the lack of inspired, aggressive leadership. Reports have been made, laws have been drafted and recommended; action to correct abuses of existing laws has awaited definite and inescapable mandate from Congress; but the "punch" required to convert reports and recommendations into established policy has not materialized. Always the solution has been diluted by the tradition for land disposal and passage of title to private ownership. Had there been inspired leadership, such as Gifford Pinchot displayed in putting into effect a constructive conservation program for forest lands, the unreasonable delays could not have continued. Partisan politics, adherence to outmoded precedents, suspicions of bureaucracy, pure inertia, unwillingnesses to face facts, and lack of appreciation of the worth of the forage resource—none of these nor all together would have been able to obstruct, as they have done, so obvious a course of action on behalf of the public welfare, if such leadership had developed.

THE EFFECTS OF PAST LAND POLICY

EFFECT ON PRESENT RANGE-LAND OWNERSHIP

The ownership pattern of range lands within the region where the raising of range livestock must be the major industry has gradually become exceedingly complex and confusing. In general, our land-disposal laws were so drawn as to keep ownership units to a small size and, except in the case of the national forests, to make no provision for continuing use of sufficient additional range to support a home unit. That one purpose back of this type of legislation was the prevention of monopoly in land ownership and control in no way alleviates the situation which we now face.

The only laws which were so framed as to facilitate the control of range land in units of manageable size were those providing for certain Federal reservations and those which authorized the exchange of private or State lands within these reservations for lands in the unreserved public domain. The national forests, and more recently the grazing districts, have for one purpose the consolidation of ownership for better management. Yet, even in this type

of ownership, management is made more difficult by the titles which passed from the Government before the creation of the reserves. Railroad grant lands, State school sections, submarginal homesteads, and other private land within the boundaries present a problem, the solution of which will not be easy.

A considerable part of the public domain coming within the grazing districts is in such small tracts and so badly scattered that real constructive range management can be had only when and if the adjoining areas can be included under the same administration. Figure 62 gives a generalized picture of the area included within the various Federal reservations and on which grazing use can be controlled in varying degrees. Actually, much of these areas is still in the patchwork pattern shown in figures 63 and 64.



FIGURE 63.—OWNERSHIP PATTERN IN COLORADO.

Characteristic of many a western range county, the actual pattern is even more varied than here indicated, since "Corporate groups", "Nonresident", and so on, may include several different owners in any one block of land so labeled.



FIGURE 64.—RANGE OWNERSHIP IN MONTANA.

Such "crazy quilt" patterns of ownership as shown in this small area in Montana and in fig. 63 encourage and accelerate range depletion by offering a serious handicap to good range management. It is obvious that units of ownership or control and of management practice must bear some relation to each other.

Through the operation of lieu selections, States and railroads in selecting indemnity lands have been enabled to effect a considerable amount of consolidation. A large part of these selections, however, has been in regions where timber values were high and where grazing values were correspondingly low if not entirely absent.

Outside the boundaries of the Federal reservations we find a confusing ownership picture. It has been well described by R. R. Renne, of the Montana Agricultural Experiment Station in a recently written unpublished manuscript. The description is typical of much of the eastern two-thirds of that State.

Thousands of tracts owned by individuals residing all over the United States; thousands of small farm units interspersed among grazing areas and other ownerships; a large portion of the remaining public domain occurring in isolated, disconnected tracts; state holdings scattered, usually including the sixteenth and thirty-sixth sections of each township; thousands of acres of county land, taken through continued tax delinquency, and occurring haphazardly in small units; railroad lands making a checkerboard effect in some areas, being much more scattered in others; insurance company lands scattered thinly here and there; investment and mortgage company holdings strung out in a disorderly fashion, representing parcels out of larger blocks not yet sold; lands foreclosed by land banks and commercial banks occurring at random here and there * * * such is the pattern of ownership established under a policy of "laissez faire", free individualism, and planless settlement. With such a pattern economic instability, overgrazing, and general misuse of the land occurs.

The above description by one who has spent several years in an intensive study of the land-ownership problem in our western range country is not overdrawn. Figures 63 and 64 present graphically the ownership pattern of typical areas in Montana and Colorado. Actually the ownership in these areas is immeasurably more complicated than here shown, as is evident in the necessary grouping on these maps of several ownerships in certain of the classes. For example, Federal ownership may include land under the jurisdiction of several departments or bureaus; corporate ownership includes not only railroad land but that of all banks, investment houses, insurance companies, and all other incorporated entities; and private ownership is widely distributed among both residents and nonresidents. Need more be said concerning the seriousness of multiplicity of ownership in its effect on range management in a predominantly range country where it takes from 3 to 15 acres to support one cow for a month?

Our land policy has had equally serious effects on the resultant land use. Generally the land-disposal laws have not provided for adequate land classification before settlement was permitted or title was passed. It is true that certain laws, specifically the stock-raising homestead law, did so provide, but in practice the classification was in no sense adequate and did not protect the settlers from an uneconomic land selection. Land-hungry applicants, encouraged by publicity departments of railroads, real-estate locators, and local chambers of commerce—with or without previous farm or ranch experience—were permitted to select at random their quota of land. Title was allowed to pass with little regard to the suitability of the land for the purpose intended.

To say that the application of the 160-acre homestead law to the nonirrigable lands of the semiarid West was disastrous is no overstatement. The dry-farm wheat belt of the short-grass plains was settled under this law. The effect of the World War with its resultant peak prices for wheat and other farm commodities, coming during the period of settlement, has been described in an earlier section.

At this time, too, the dry-farm region was favored with more than normal precipitation for a period of several years. As one result of this coincidence literally millions of acres of the best natural range was turned under with the plow. Then the war ended. Wheat surpluses built up. The dry years came on. A large part of these wheatlands that once were range were abandoned.

While no reliable statistics as to the extent of abandonment are available, it has been estimated that more than 20 million acres is not too high a figure. In Montana, according to unpublished estimates, nearly 5 million acres, and in Washington more than 1 million acres of such land present a major problem. Homesteads patented under the various laws, State lands leased for agricultural use, railroad lands, and homesteads not yet proved up on, all suffered in varying degree.

The dry-farm wheat lands of many parts of the West today present a discouraging picture. Immense areas which once supported a fine stand of grama and buffalo grass now grow little except worthless weeds. Literally thousands of homes, cheaply constructed to be sure, stand dilapidated and abandoned. Other hundreds of homes still occupied plainly show a degree of poverty seldom equaled in our city slums. Schoolhouses are abandoned, or if still used, show the results of an attempt to continue public education at a cost per pupil greatly exceeding that in the more prosperous communities. Local governments are deeply involved in financial difficulties, if not in fact actually bankrupt. It is thus that we pay the price of a land settlement that ignores sound planning in the use of land.

The extent of tax delinquency in the range area is not now known. Comparable figures for the entire area have not been collected. Sample range counties in several States are, however, available to indicate the extent to which ownership has reverted to the public. According to R. R. Renne, the county governments of Montana in 1934 owned 2,526,349 acres (excluding lands within the boundaries of incorporated municipalities, highways, rights-of-way, etc.) Several times as much was delinquent 3 or more years and subject to tax deed, but because of recent tax moratorium legislation title had not been perfected.

Table 46 indicates for Montana, for which tax data are available, the building up of delinquency during recent years. Although it is impossible to segregate natural range from cropland, it is well known that delinquency is worst on dry-farm wheatland which has been abandoned for cropping. The counties in which delinquency is most prevalent are those in which range livestock and dry farming have predominated. In the final analysis, tax delinquency of abandoned dry-farm land is a range problem. It is only through rehabilitation for range use that these lands can again be made to produce satisfactorily. It is significant that even during the prosperous years delinquency was serious. In 1928, as shown in table 47, more than 15 percent of the range and cropland was so listed and by 1933 this had increased to more than 40 percent.

TABLE 46.—*Progress of tax delinquency on range and cropland in Montana*

Year	Total area	Delinquent—		
		Lands	Properties	Owners
	<i>Acres</i>	<i>Percent</i>	<i>Number</i>	<i>Number</i>
1928.....	53, 043, 690	15. 11	30, 253	25, 373
1929.....	53, 452, 362	17. 11	34, 179	28, 176
1930.....	53, 305, 504	22. 86	44, 252	34, 650
1931.....	52, 871, 826	35. 44	62, 224	46, 878
1932.....	52, 313, 339	41. 49	72, 801	54, 558
1933.....	52, 341, 924	40. 24	69, 682	52, 388

TABLE 47.—*Tax delinquency, by years, in one Colorado county*

Year levied	Land					
	Irrigated	Grazing	Dry farm	Meadow	Coal	Total de- linquent
	<i>Acres</i>	<i>Acres</i>	<i>Acres</i>	<i>Acres</i>	<i>Acres</i>	<i>Acres</i>
1932.....	234, 023	685, 371	499, 323	3, 280	892	1, 422, 889
1931.....	206, 075	635, 404	449, 903	3, 142	805	1, 295, 329
1930.....	166, 824	523, 977	383, 112	3, 240	780	1, 077, 933
1929.....	159, 657	539, 907	367, 755	2, 691	733	1, 070, 743
1928 ¹	144, 294	522, 342	350, 392	3, 138	699	1, 020, 865
Total.....	910, 873	2, 907, 001	2, 050, 485	15, 491	3, 909	5, 887, 759
Average.....	182, 175	581, 400	410, 097	3, 098	782	1, 177, 552
Percent.....	15. 5	49. 4	34. 8	0. 2	0. 1	100. 0

¹ Even prior to the depression, tax delinquency in this county was a serious problem, as it was in adjoining States also.

That the above situation is not peculiar to any one range State is shown in the Colorado yearbook for 1933-34 on page 277. In 1932 nearly 61 percent of the privately owned farm and ranch land (approximately 21,760,000 acres) was delinquent for general property taxes. In 1928 the percentage of delinquency was only 30.4 percent and the acreage involved was 10,679,034 acres. That delinquency in this instance was worst on grazing land and dry-farm lands is shown by table 47, which is based on information for one typical range county. It is significant that 49.4 percent of the delinquency is on range land, and 34.8 percent is on dry-farm land which should have remained in grass, while only 15.5 percent is on irrigated crop land. Thus 84.2 percent of the tax delinquency in this county is on land for which grazing would seem to be the highest use.

The tax delinquency situation is likewise serious in the range livestock counties of eastern Oregon. As of March 1, 1934, 12 eastern Oregon counties in which the range industry is predominant or co-dominant with lumbering, owned 674,450 acres of land. Abandonment of land to the counties for unpaid taxes was far less in arable agricultural counties than in the grazing counties. In three range counties the acreage of land on which taxes were delinquent 3 or more years, but which had not gone to county ownership, increased from 187,393 acres in 1928 to 1,092,731 acres in 1933. Although an exact division between range and submarginal farm land is not possible, the delinquency situation is known to be very serious for both classes of land. While additional data from sample plot studies in other States are available, those given are sufficient to establish the fact

that on range land and especially on abandoned dry-land tax delinquency is a serious problem. Probably the latter class of land is in greatest distress.

The period of rapid homesteading and expansion of wheat production brought large increases in population. Towns were organized; school districts were created; counties were divided; road and highway districts came into being; new local taxing bodies were initiated on every hand. Thus there developed a local government pattern designed to serve a relatively dense population. That it was expensive mattered little during the boom days. Bond issues were easy to float. Today, with the population reduced in number (Montana suffered a 20-percent reduction in the number of farm units between 1920 and 1930) and with a full realization that, after all, the land was intended for grass, the problem of developing a suitable local government is acute.

The need for high-quality, efficient government is immeasurably increased by the economic difficulties now facing the range counties. The tax base upon which to finance good government is decreasing and with each additional tax abandonment the loan on those still paying becomes heavier. The inclination to "let the county have the land" spreads to owners of better and better land. The solution does not rest in providing "cheaper" government but in providing better and more efficient government.

Part of the answer may lie in consolidations of small governmental units and in careful long-time planning and rehabilitation. Besides focusing the attention of the community on the problem of good government, consolidation should, through reduced overhead, lower the costs, although it must not be forgotten that it will not reduce the combined bonded indebtedness of the units consolidated. Thus, through elimination of some of the local governments, there is a definite possibility that the functions of government may be better performed and at less cost.

Within this picture of tax delinquency one other important factor requires especial consideration. In most of the States lands upon which taxes are unpaid ultimately pass to the counties or remain in the twilight zone of no ownership until sold. Hence we are building up in the range country a "new public domain." Too often, under pressure for increased county revenue, and in some instances in accordance with State laws, these lands are sold to the highest bidder, only to revert again for nonpayment of taxes when the new owner realizes their true worth. Thus, these lands shift between county and private ownership without regard for their income-producing value and in a status to encourage improper use. It is obvious that these lands are submarginal for private ownership in the use to which they have been put. It is equally clear that under present conditions the counties cannot afford to own them. Much range land has been depleted to the point where it is now unable to carry its share of the cost of government. The abandoned crop land, although it was no doubt once first-quality range, has come back to public ownership with the forage cover destroyed by plowing and now supporting a sparse stand of vegetation of low value for grazing in place of the original fine perennial grasses.

That revegetation by natural means will require an excessive period of time is shown by a recent (unpublished) study by E. W. Nelson

of Montana University Forest School. Table 48, which is taken from his report, shows that during the first 5 years after abandonment 85.7 percent of the cover consisted of worthless and unpalatable species. Only 7 percent was grass. Even 16 or more years after abandonment it was found that more than 29 percent of the cover was made up of unpalatable species, with only 45.4 percent in the grass group. It should be noticed, further, that only 3.4 percent of this grass cover was blue grama, whereas on adjacent unbroken grasslands 36 percent of the vegetative cover is accounted for by this most excellent species.

TABLE 48.—Occurrence of native species on various types of land in Wheatland County, Mont.

GRASSES AND GRASSLIKE PLANTS						
Species	Scientific name	Native grass-land	Abandoned plowed land			
			1-5 years	6-10 years	11-15 years	16 years and more
		Percent	Percent	Percent	Percent	Percent
Blue grama.....	Bouteloua gracilis.....	36.0	0	2.0	3.0	3.4
Bluestem.....	Agropyron smithii.....	7.8	6.0	12.0	12.0	18.0
Needle and thread.....	Stipa comata.....	12.5	1.0	13.5	20.0	16.0
June grass.....	Koeleria cristata.....	4.0	0	1.0	2.0	(1)
Native bluegrass.....	Poa spp.....	(1)	0	(1)	(1)	(1)
Other grasses.....		3.0	0	4.0	4.0	8.0
Dryland sedges.....	Carex spp.....	13.0	(1)	1.0	2.0	2.3
PERENNIAL AND BIENNIAL WEEDS						
Palatable.....		0	1.6	3.1	5.4	2.2
Unpalatable.....		4.6	11.8	13.1	8.0	10.2
ANNUAL WEEDS						
Russian thistle.....	Salsola kali.....	2.0	70.0	26.0	16.0	12.0
Other annuals.....		3.2	2.3	4.2	2.4	1.0
BROWSE						
Silver sage.....	Artemisia frigida.....	8.0	5.7	13.8	18.3	17.2
Snakeweed ¹	Gutierrezia sarothrae.....	2.3	1.6	5.1	6.9	5.0
Phlox ²	Phlox muscoides.....	2.6	0	1.2	(1)	3.7
Cactus.....	Opuntia polyacantha.....	1.0	0	0	0	1.0
Total.....		100.0	100.0	100.0	100.0	100.0

1 Less than 0.5 percent.

2 Considered half shrubs.

Nelson's conclusions as to rate of natural rehabilitation of plowed and abandoned dry farms are substantiated by those reached by Shantz (125) from a study in Colorado in 1911. In the Escalante Valley in southwestern Utah, George Stewart found that the rate of recovery of lands last plowed in 1913 was very much slower than that determined by Nelson in Montana.

It is seriously questioned whether private owners can profitably hold a class of land which shows so little improvement even after many years of abandonment from cropping. Its rehabilitation within a reasonable period seems generally to be dependent on artificial reseeding. Just how private owners and underfinanced coun-

ties can undertake a wholesale program of artificial reseeding in a region where the climate makes the undertaking extremely hazardous and until the costs of such treatment can be reduced to much less than the value of the land so treated has yet to be answered.

The problem for the rehabilitation of badly depleted range land and the restoration of abandoned dry farm land seems to be one for a strong unit of the Government to undertake.

EFFECT ON THE RANGE RESOURCE

The complex ownership pattern of range land which has been built up and the deterioration and destruction of the range resource which has accompanied this process presents a major problem to the livestock industry, dependent communities, the States, and the Nation. As is shown in discussing integrated agriculture, crop farming and range use are inseparable parts of the agriculture of the Western States. The extent to which either use is successful depends in large part on the degree to which the other can be made to contribute toward it. Clearly close coordination is essential to the permanent and continuous prosperity of the integrated agriculture.

Coordination in use is equally essential to the conservation of the high public values which much of this land carries. High-value watersheds, critical erosion areas, tracts badly needed for recreational use, and key areas for game use have been passed to private ownership or abusively used without regard for their need for these special services.

One of the essential features of sustained-yield management is security in the right to use the forage resource which may properly be harvested from the land. That such security is impossible under an ownership pattern such as has been previously described seems clear. One small area sufficient for even 150 head of cattle or a small band of sheep may be divided in ownership between so many individuals, corporations, and agencies that planning for future use is impossible. The logical user of the range is never sure that some less dependent competitor will not legally invade his range through purchase or lease of part of the area. Also, the situation which now exists lends encouragement to the "coyote sheep herder", who, by the lease of small, widely separated areas, combined with his equal right to use such public domain as may remain, feeds his flocks in trespass on areas which have been held for special seasonal use, or which purposely have been lightly grazed as a range rehabilitation measure. Thus the usual result is to consider only the present and get the last blade of grass every year. Under such treatment range depletion has been serious and will continue.

The effect of dry farming on the range resource has already been discussed. The native range forage has been destroyed and has been replaced by plant species of little or no forage value. Natural rehabilitation will be extremely slow. Unfortunately, these dry farm lands are often intermingled with unbroken range lands, thus reducing the average carrying capacity of entire units to an extremely low level. Ownership is widely distributed, and tax delinquency is most serious. Thus, in regions where unsuccessful dry farming has been practiced, the problem of range rehabilitation is particularly

difficult and is made more complicated by the land-ownership situation which exists.

One of the most unfortunate results of the land policy which has been followed in the West is the extent to which it has encouraged overinvestment in land, and in turn abuse of the range. As homestead entries were allowed and patents were issued the stockman who had previously used the range borrowed from the banks to buy out the so-called settlers and gave a mortgage on his enlarged holdings as security. The increase in owned range did not increase the area or productiveness of the range unit which he had previously used free of charge as public lands. To meet taxes and interest payments on the enlarged ownership, the stockman usually found it necessary to increase the size of his flock or herd. The result, almost inevitably, has been overgrazing and range depletion.

Under the conditions which have been described it is to be expected that ranges generally have been depleted. The extent to which depletion has gone under the various forms of ownership and control should be one guide to future action. It is significant that in every major forage type the national-forest ranges are now in better condition than those under any other form of control. At the other extreme, as might be expected, is the public domain, where no administration has been given to range use.

THE PROBLEMS WHICH ARISE FROM LAND OWNERSHIP

The tangled and illogical ownership pattern which has arisen from the lack of constructive land policy as previously shown, has had and still has a serious influence on the perpetuation of the range resource. Four problems stand out as the major features which require solution.

SIMPLIFICATION OF OWNERSHIP PATTERN

Clearly, such intermingling of ownerships as is illustrated by figures 63 and 64 is too great a handicap on the development of good range management. The situation is made immeasurably more acute by the fact that a very high percentage of the lands is held by absentee owners who have no personal interest in the community welfare other than that of obtaining a return on their investment.

Another large segment of potential range land widely diffused in ownership has been effectively lifted out of production by an unsuccessful attempt to grow dry-farm wheat. The economic rehabilitation of such land for productive use depends in large part on assurance for future good management of the property. Simplification of the pattern will be one incentive to better treatment.

State legislation to facilitate consolidation in some form of public ownership, the formation of cooperative grazing districts for administration of certain units, and active participation by the Resettlement Administration of the Federal Government should all be considered as possible aids to the solution of this problem. A more logical ownership pattern is fundamental to permanent range rehabilitation and maintenance.

DIVISION INTO ECONOMIC UNITS

The distribution of the grazing resource in such a way as to avoid monopolistic tendencies, without dividing it up in such small units as to destroy its social value, is another major problem. Ideally and ultimately the range resource will probably contribute most if made to support the maximum number of satisfactory home units. This does not necessarily mean individual ownership of sufficient ranch and range property to support the number of stock required to meet this objective. The system of distribution of grazing privileges in effect on the national forests offers one solution. Under this system dependency of the outfit on the use of range forage, the commensurability of owned land on which supplemental feeds are raised or which is used as winter range, and the number of stock owned each are considered.

The livestock requirements for an economic unit will vary greatly. In regions where range livestock is the sole means of support, the ideal family unit may call for about 150 to 200 head of cattle or a small band of sheep. Where diversified farming is practiced, provision to graze only a few head of stock may be essential to supplement the other farm income. In certain regions where successful management is contingent on running a large outfit it may be entirely proper to recognize such ownership. Always the effect of size of outfit on the cost of producing meat, wool, and hides must be given fair consideration. The controlling principle in each decision should be the support of the maximum number of people at an acceptable standard of living. If this objective can be approached, the cost of rebuilding the depleted ranges can be justified.

TAXATION

One of the problems of range-land ownership is that of taxation. The extent of tax delinquency in the range country establishes the fact that, in their present run-down condition, much range land cannot carry the load. It is significant that, generally, on those properties where good range management has been practiced the taxes have been paid. Certainly a part of the solution of the range-land tax problem rests on rehabilitation for maximum production, but the ranges are not yet rehabilitated and taxes are payable each year.

Range lands must, as a matter of course, pay their full share of the cost of good government. Their failure to do so in recent years is so greatly influenced by the effects of the lack of good management and by the delinquency of intermingled lands improperly used for crop agriculture that thoroughly reliable conclusions are impossible. It seems probable that the taxes on these lands are disproportionately high in terms of real income value. This much is clear. A comprehensive analysis of the tax problem on the range area should be undertaken, and in the meantime serious consideration should be given to the possibilities of revamping the local government organization to fit the population pattern which exists. Certainly some means must be found to prevent range lands from being given the abusive treatment commonly accorded to tax delinquent or reverted property.

RESPONSIBILITY FOR RESTORATION

Finally, regardless of who owns the land, full recognition must be given to the fact that range forage is an agricultural crop. That this fact has not been appreciated is evident. A large part of federally owned range lands are administered outside the Department of Agriculture. State and county lands have been administered by agencies whose primary responsibility is revenue collection, and the State agricultural services have used little if any. Private lands, in most instances, have been "mined" rather than cropped for forage. Until such time as the natural laws of crop production and plant growth are followed in range management, restoration is not to be expected.

Correction of the bad range-management practices will be aided by placing responsibility for range restoration with those agencies engaged in the solution of agricultural problems. Not only is this true for Federal and State lands but for large tracts in corporate ownership as well.

